Enterprise Sustainability Performance Measurement in Small and Medium Enterprises in Kenya: Construct Validation Using Confirmatory Factor Analysis

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Abstract
This study sought to validate existing sustainability performance measurement scales in the context of Small and Medium Enterprises (SMEs) in Kenya. The study was cross-sectional. Data were collected through a structured questionnaire from a sample of 221 SMEs drawn from a target population of 517 SMEs using a stratified random sampling strategy. The respondents were apex managers of the sampled SMEs. Valid responses were received from 134 respondents representing a 60.63 percent response rate. Descriptive statistics and confirmatory factor analyses were performed to achieve the study's objective. From the analysis, four-factor loadings were extracted suggesting that the sustainability performance of SMEs in Kenya could be viewed from a quadruple bottom line perspective, that is, economic, internal processes, environmental and social perspectives. The study confirmed the reliability and validity of the measurement scales. The study, therefore, concluded that sustainability performance measurement in SMEs in Kenya could best be viewed from the integration of environmental, social, internal processes, and economic performance aspects. The study recommends empirical studies in Kenya to integrate the four dimensions in assessing SMEs' performance.

Keywords: enterprise sustainability, performance measurement, small and medium enterprises, construct validation, confirmatory factor analysis, Kenya.

1. Introduction

1.1 Background to the Study
Small and Medium Enterprises (SMEs) have been recognised for their contribution to addressing social and environmental problems in society (Hockerts & Wustenhagen, 2010; York & Venkataraman, 2010; Zahra et al., 2009). They account for over 90 percent and 50 percent of all businesses and employment opportunities, respectively, and significantly contribute to the gross domestic product of economies around the globe ([International Finance Corporation] IFC, 2013; Muriithi, 2018; Sommer, 2017). Further, SMEs play a critical role in the value chain, linking large firms to suppliers and consumers and being at the forefront of technological innovations and diffusion (Luetkenhorst, 2004). Commensurate with their high numbers, SMEs collectively contribute 60 percent of carbon dioxide discharges (Marshall Report, 1998; Revell & Blackburn,

2007) and 70 percent of the world's pollution (Hillary, 2004; Revell et al., 2010), signifying their negative impact on the natural environment. SMEs' awareness of their impact on the environment is also limited (Loucks et al., 2010). Malesios et al. (2021) posit that sustainability is a major issue among SMEs, which tend to focus more on economic performance at the expense of social and environmental aspects. However, with increased interest in sustainable business models (Kinoti, 2011; Nosratabadi et al., 2019; Todeschini et al., 2017), SMEs are under pressure from their customers, mainly large multi-national firms and the general public to embrace sustainable business practices (Malesios et al., 2020). It is, therefore, important for SMEs to embrace and practice sustainable business practices for long-term survival and success. According to Chang and Cheng (2019), sustainability development is an important goal to achieve competitiveness in the marketplace and therefore, a need for SMEs to initiate strategies for sustainability development.

In Kenya, only 27 percent of all businesses have attained sustainability certification of which, the majority are large firms (International Trade Center, 2019), suggesting that SMEs' sustainability awareness is low. Kenya's Vision 2030 aspiration of attaining middle-level income status is premised on the country attaining and sustaining a gross domestic product growth rate of 10 percent (the Republic of Kenya, 2012). While SMEs are expected to play a significant role in economic growth, their increased economic activities are as well expected to contribute significantly to water and air pollution, public health as well as urban ecological degradation because of the associated increase in energy and water consumption and production of solid waste and harmful, poisonous matters (Mulea, 2015; Nyangena, 2012). According to Chang and Cheng (2019), extensive use of resources can trigger adverse effects on the environment, causing climate change, which is considered the greatest threat to the ecology (Costello et al., 2009; Lorenzoni & Pidgeon, 2006; Lu et al., 2018). Kinoti (2011) highlighted global warming, depletion of crucial natural resources, industrial water, and air pollution as well as hazardous waste as major environmental concerns nerve-wracking the world today. Thus, there is an urgent need for SMEs which form the bulky of businesses in Kenya (Ministry of Industrialization and Enterprise Development, 2015; Mwangi, 2016) to embrace and practice sustainable business practices by striving to balance economic, environmental, and social aspects of performance.

While literature suggests that every small, medium or large business should attain a balance between economic, social, and environmental priorities (Kimuli et al., 2021), SMEs have mainly prioritised economic aspects to maintain competitive advantage (Malesios et al., 2020). According to Malesios et al., SMEs' characteristics have contributed to a lower implementation of sustainability strategies. SMEs are portrayed as lacking in strategic planning and understanding what their critical success factors are (Greatbanks & Broaden, 1998), with some studies considering SMEs' management tactics as short-termism, firefighting, and reactive to external pressure and limited in resource abundance (Ates & Bititci, 2011; Etes et al., 2013). A lack of clear and definite strategies poses a challenge for SMEs to design performance measurement systems that are premised on organisational goals (Taticchi et al., 2008). This is despite literature suggesting that there are potential benefits that could accrue to SMEs that adopt sustainable business practices by having the right balance of economic, social, and ecological performance aspects (Galpin et al., 2015; Johnson & Schaltegger, 2016).

According to Luken and Stares (2005), financial savings associated with a reduction in water, energy, and raw material use; environmental improvement as a result of waste management; social capital as well as product improvement leading to reduced rejects, better quality, and increased yields are some of the benefits that can follow the adoption of sustainability practices by SMEs. The adoption of sustainability practices may enable SMEs to access the global value chain and export markets to benefit from price premiums, increased sales, and more stable markets. Further, integration into the global value chain may promote knowledge and technology transfer to SMEs in developing and emerging markets (Sommer, 2017). According to Galpin et al. (2015), companies that incorporate social and ecological aspects in economic performance assessment have been able to outperform those that have focused on economic performance alone. Thus, the implementation of sustainability practices has the potential to foster sustainable SME development which, in turn, contributes to employment creation and economic growth which is in line with the United Nations Sustainable Development Goals, such as Goal 8 which emphasises the attainment of decent work and economic growth (International Trade Center, 2019; Mulea, 2015, Sommer, 2017).

1.2. Performance Measurement

Performance measurement is considered an important requirement for enhancing enterprise performance (Arie, 2005). In the context of SMEs, performance measurement is said to play a crucial role in enhancing managerial capabilities (Garengo et al., 2005). However, SMEs' performance measurement literature is considered undeveloped with recognised performance measurement frameworks often failing when applied to SMEs (Taticchi et al., 2010). Since the 1990s, there has been a notable shift in performance measurement from the traditional measures of performance that mainly focused on the economic perspective to modern performance measurement (Tangen, 2004) such as the Triple Bottom Line (TBL) integrating economic, environmental, and social perspectives (Elkington, 1994). Modern performance measures were designed to bridge the limitations of traditional performance measures which were viewed as focusing mainly on short-term goals (Goshu & Kitaw, 2017). Although TBL was conceived and developed with large firms in mind, numerous studies suggest that SMEs can apply and benefit from it (Burke & Gaughran, 2007; Lee, 2009; Galpin et al., 2015; Revell et al., 2010).

1.3 Small and Medium Enterprises in Kenya

In Kenya, small enterprises are defined as those firms employing 10 to 50 employees with an annual turnover of up to Kenya shillings 5 million and investment in plant and machinery including registered capital of Kenya shillings 50 million and 20 million for manufacturing and service entities, respectively (the Republic of Kenya, 2012). However, there is no formal definition of medium enterprises. As such, the available definition of medium enterprises is based on the definition of small enterprises with studies placing the number of employees between 50 and 100 (Douglas et al, 2017; Mwangi, 2016; Wairimu, 2015). The Klynveld Peat Marwick Goerdeler (KPMG) East Africa and Nation Media Group (NMG) consider enterprises that have attained an annual turnover of Kenya shillings 50 million to one billion as medium enterprises (http://eastafricatop100.com). This definition does not use the number of employees, thus focusing on turnover alone. Considering that prior definitions were offered before the rebasing of Kenya's economy and that the number of employees does not entirely explain the

size of an enterprise (Baker & Sinkula, 2009), this study adopted the KPMG East Africa and NMG threshold, thus defining SMEs as those firms with an annual turnover not exceeding Kenya shillings one billion.

After its economy was rebased, Kenya's economy was categorized as a lower-middle-income economy (Hirsh & Lopes, 2020). Based on a 2013 gross domestic product and per capita income, which stood at United States Dollars (USD)53.4 billion and USD1,246, respectively, Kenya is rated ninth and fourth largest economy in Africa and Sub-Saharan Africa, in that order, and the dominant economy in the East African Community (Kimenyi et al., 2016). Even though the country has experienced rapid economic progress, problems with unemployment, poverty, and inequality persist, endangering the stability, security, and long-term growth of the country (Kimenyi et al., 2016). The majority of jobs attributed to SMEs are in the informal sector, which implies non-wage employment with low productivity and consequently insufficient to solve issues associated with poverty (Kenya National Bureau of Statistics, 2017) and attainment of sustainable development goals. Thus, there is a need to employ strategies that would enhance SMEs' competitiveness and performance to contribute significantly to employment creation, economic development, and the attainment of sustainable development goals as well as minimise their negative impact on the natural environment.

While literature suggests that performance measurement systems could play a critical role in supporting managerial development in SMEs, existing performance measurement frameworks such as the TBL were developed from large firms' perspectives. Yet there are differences between large firms and SMEs that need to be considered when applying performance measurement frameworks. Concomitantly, studies investigating performance measurement using the TBL framework in Africa are rare with most of the literature originating from Europe and Asia (Malesios et al., 2021). According to Muthuri and Gilbert (2011), it is necessary to contextualise sustainability studies since cultural and social values that influence sustainability practices may differ from one economy to another (Blowfield & Frynas, 2005; Jamali & Mirshak, 2007). Additionally, it has been observed that studies on sustainability development have mainly emphasised theoretical discussions with little focus on quantitative data analysis, especially in SMEs (Chang & Cheng, 2019). As well, there is a dearth of studies assessing economic, ecological, and social perspectives concurrently (Abdul-Rashid et al., 2017). Thus, there is a need to empirically evaluate the existing performance measurement frameworks in the context of SMEs in a developing country in Africa. The purpose of this study was therefore to validate the existing sustainability performance measurement scale in the context of SMEs in Kenya using Confirmatory Factor Analysis (CFA). The aim was to provide researchers with a validated sustainability performance measurement scale to build on and apply in empirical studies assessing SMEs' performance.

2. Literature Review

2.1 Performance Measurement
Performance measurement is an important component in an organisation as it helps ascertain whether the organisation is achieving its objectives or not (Goshu & Kitaw, 2017). Thus, the achievement of organisational objectives is premised on what is measured (Arie, 2005; Cocca & Alberti, 2010; Kaplan & Norton, 1992). Hauser and Katz (1998) emphasise the importance of

performance indicators by asserting that an organisation is what it measures. According to Neely et al. (1995), performance indicators are used to quantify the efficiency and effectiveness of an organisation's operations. Tangen (2004) outlines the development of performance measurement in organisations from the 1950s to 2000s when effectiveness was the sole measure of performance to multiple dimensions of performance incorporating effectiveness, efficiency, productivity, flexibility, creativity, and sustainability. Thus, extending performance measurement beyond the traditional financial indicators which were viewed as emphasising immediate output (Hayes & Abernathy, 1980), local optimisation (Hall, 1983) as well as short of strategic emphasis (Skinner, 1974). This development is linked to disruptions in the global business environment (Bititci., et al. 2012), including changes in technology (Goshu & Kitaw, 2017) putting businesses under pressure to track and report their economic as well as social and environmental impacts (Hubbard, 2009).

To quantify the influence of business operations beyond economic performance, Elkington (1994) advanced the concept of TBL to integrate ecological, social, and economic performance aspects in the performance measurement frameworks. Thus, considering enterprise performance from society (people), ecological (planet) as well as shareholders' (profitability) perspectives (Slaper & Hall, 2011). According to Zak (2015), TBL is premised on the stakeholder viewpoint, where an organisation evaluates its impact on all those that affect or are affected by its activities (Freeman, 1984). According to Elijido-Ten and Tjan (2014), adopting TBL could lead to the identification of vital social and environmental strategic goals of an organisation, contributing to long-term survival and growth as well as enhancing economic performance. According to Morioka and Carvallo (2017), the integration of social, ecological, and economic aims in a performance measurement system is crucial to a business engaged in sustainable development.

2.2 Enterprise Sustainability Performance Measurement
Expressions such as sustainability, Corporate Social Responsibility (CSR), corporate social performance, going green, and TBL have all been used to describe organisations trying to balance economic, ecological, and social aspects of organisational performance (Galpin et al., 2015). Sustainability has been a focus of management literature over the past three decades, with scholars highlighting its significance for SMEs (Johnson & Schaltegger, 2016). Different definitions of enterprise sustainability have been offered in the literature, most of which are derived from the Brundtland Commission's definition of sustainable development as attaining the needs of the present generation without negating the ability of forthcoming generations to satisfy their own needs (Brundtland, 1987; Kinoti, 2011). For instance, Dyllick and Hockerts (2002) described sustainability as requiring the incorporation of economic, ecological, and social components in the short and long-term planning of an organization. Dahlsrud (2008) described enterprise sustainability in terms of CSR, as the voluntary integration of social and environmental concerns in business operations and interaction with stakeholders, suggesting that in the process of performing business activities to attain economic benefits, managers on their own volition, take action to conserve the environment and improve the lives of those with whom they interact (Smit et al., 2011).

Despite there being various terms used to define enterprise sustainability (Chang & Cheng, 2019), established consensus among scholars is that sustainability entails three components, that

is, economic, environmental, and social perspectives (Aguinaga et al., 2018; Hsu et al., 2017; Thabrew et al., 2018). Thus, the sustainability of enterprises has become synonymous with the three dimensions serving as sustainability performance indicators. Sustainability performance measurement is founded on the stakeholder view where an enterprise is seen as having responsibilities to multiple groups such as employees, customers, suppliers, governments, trade bodies, and host communities interested in the operations of an enterprise (Hubbard, 2009). TBL framework incorporating economic, environmental as well as social perspectives has been widely recognised as a tool for measuring organisational performance that addresses the needs of multiple groups (Zak (2015).

The social performance aspect focuses on the impact an organisation's operations have on the local communities, employees, and customers as attested by contribution to community-focused programmes, creating a safe and healthy working environment for employees, meeting customers' needs by offering quality and timely products and services (Malesios et al., 2021). The neglect of the social dimension can have a damaging impact on the image of an enterprise (Chang & Cheng, 2019). The ecological aspect on the other hand refers to the conditions surrounding human activities and their impact on the natural environment (Abdul-Rashid et al., 2017). Thus, ecological sustainability is concerned with the reduction of the quantity of water, energy, and land a firm uses in its operations as well as by-products such as solid waste, air emissions, and chemical residuals (Hubbard, 2009; Kinoti, 2011). The economic angle is often demonstrated through objective measures such as growth in profit, market share, turnover, and return on investment and assets, or through subjective measures such as the perception of customers and the general public about the organisation's products and services (Malesios et al., 2021).

Various theories such as the stakeholder theory, institutional theory as well as theory of planned behaviour have been applied in different studies to help explain the motivation and benefits of sustainability practices in various organisations. Discussing from a strategic point of view, Hubbard (2009) posits that sustainability in an organisation can be seen as a compliance issue, cost minimisation strategy, or opportunity for competitive advantage. The stakeholder theory propels the idea that an organisation's success is a function of how well it manages its relationship with different stakeholders (Freeman & Phillips, 2002). Stakeholders are defined as everyone who can affect and be affected by the operations of an organisation (Freeman, 1984). According to Freeman and Phillips, managers have a primary responsibility to influence or balance the set of relationships that affect the achievement of an organisation's purpose. Organisational sustainability recognises that an organisation has a responsibility to address the varied interests of diverse groups that its operations might affect, hence the application of stakeholder theory (Hubbard, 2009).

The institutional theory postulates that organisations adapt to their environment to achieve organisational legitimacy (DiMaggio & Powell, 1983). The theory is concerned with regulatory, social, and cultural influences that promote the survival and legitimacy of an organisation instead of concentrating exclusively on lowering costs (Roy, 1997). The theory recognises the role of institutions in defining what is appropriate or expected in various social and commercial situations (Bruton et al., 2010), thus a need for compliance to survive and attain legitimacy (March & Olsen, 2010). According to Hubbard (2009), sustainability is a compliance issue that

has to be done because the law says so. The Environmental Management Coordination Act (EMCA) of 1999, the Employment Act of 2007, and the Occupational Safety and Health Act of 2005 are examples of legal frameworks compelling SMEs in Kenya to act responsibly towards the environment and workplace, thus the application of institutional theory in sustainability studies.

The theory of planned behaviour argues that the conduct of human beings is determined by their intentions to carry out certain deeds (Sa´nchez-Medina1 et al., 2014). According to Ajzen (1991), the primary factor in the theory is one's intentions to act in a given manner. Unlike institutional theory where a person's behaviour may depend on regulation, a person's motivation and desire to perform a given behaviour is driven by one's values and beliefs. Thus, the performance of a behaviour is a joint function of intentions and perceived behavioural control (Ajzen, 1991). According to Hubbard (2009), sustainability practices in an organisation can be triggered by the personal values and beliefs of the organisation's leader, thus, the application of the theory of planned behaviour in sustainability studies in SMEs.

Empirical studies investigating sustainability in SMEs in the African context are just burgeoning. For example, Kimuli et al. (2021) conducted CFA to examine sustainable entrepreneurship as perceived by owners of SMEs in Uganda. The study derived seven factors, that is, production management, people and skills, ecosystem management, stakeholder, finance, strategy, and marketing and sales, thus, providing preliminary empirical evidence on the construct of sustainable entrepreneurship in the African context. Choongo et al. (2017) sought to determine what motivates SME managers to engage in CSR practices. Based on survey responses from 221 managers of SMEs in the service sector in Zambia, the study established internal factors (financial, moral, and ethical considerations) as the reasons behind SMEs' adoption of CSR practices in Zambia. A study of manufacturing industries in the Midlands region of the United Kingdom linking lean management practices and sustainability-oriented innovation to sustainability performance established that lean manufacturing practices and sustainability-oriented innovation enable the attainment of sustainability performance, that is, the integration of social, ecological, and economic performance (Dey et al., 2020). Abdul-Rashid et al. (2017) in a study assessing the relationship between sustainability manufacturing practices and sustainability performance in International Organisation for Standardisation (ISO) 14001 certification firms in Malaysia adopted the integration of ecological, social, and economic aspects to exemplify sustainability performance.

3. Method

3.1 Study Design and Sample Determination

The study adopted a cross-sectional survey approach. The survey consisted of 221 SMEs drawn from a population of 517 enterprises determined using Cochran's (1977) sample size determination formula. The KPMG East Africa and NMG annual Top 100 medium enterprises provided the sampling frame. These companies were identified through annual surveys conducted by KPMG East Africa and NMG to recognise companies that have outperformed their peers in terms of revenue growth, profitability, geographical expansion, cash flow stability, and contribution to employment opportunities. The target population was all companies that have

been ranked among the Top 100 companies since the initiation of the survey in 2008 to 2019. The survey ranks enterprises with annual gross sales ranging from Kenya shillings fifty million to one billion. Regulated companies such as those listed on the stock exchange, banks, insurance, law, and accountancy firms are not eligible participants. In addition, a company must have been in operation for at least three years as attested by audited annual financial statements (http://eastafricatop100.com). The annual Top 100 companies were considered ideal for this study because prior literature suggests that sustainability performance measurement scales can be applied in SMEs. In addition, these companies have demonstrated that they have adopted better managerial practices that have enabled them to outperform their peers. Several studies including Bor, (2018), Ndegwa et al. (2015), and Irungu and Marwa, (2015) have used the Top 100 companies in studying SMEs in Kenya. Stratified random sampling was adopted to ensure representation and provide an equal chance for each element in every stratum to be selected (Acharya et al, 2013; Sharma, 2017).

3.2 Data Collection

A structured questionnaire was the primary data collection instrument. Drop and pick as well as emails were used to deliver and receive questionnaires from the respondents. The unit of observation was the enterprises while the target respondents were one apex manager from each of the sampled enterprises. Apex managers were chosen because they were considered to be more informed about the subject under study as they are responsible for their company's business strategies (Anwar, 2018). An integrated approach combining environmental, social, and economic dimensions was adopted to assess sustainability performance measurement. The questionnaire items were adapted from extant literature (Abdul-Rashid et al., 2017; Chang & Cheng, 2019; Malesios et al, 2021).

3.3 Characteristics of the Surveyed Enterprises and Respondents

The respondents were given a list of alternatives and requested to pick one item that best represented the type of industry they operated in, ownership type, and what they consider to be their main customers. As shown in Table 1 below, the majority of the surveyed enterprises were those engaged in professional, scientific, and technical activities (18 percent), followed by manufacturing (17 percent), wholesale and retail trade, repair of motor vehicles and motorcycles (16 percent), information, and communication (10 percent), while transportation and tour activities were (9 percent). Others were Electricity, gas, steam, and air conditioning services and, finance and insurance activities were both at 5 percent. Five categories were each at 2 percent while education and administrative support activities were at 1 percent each. Consistent with prior studies that have indicated that the majority of firms globally are family owned, the surveyed enterprises in this study were 59 percent family-owned and 41 percent non-family-owned. The results further indicated that the majority of the surveyed firms (54.5 percent) were businesses-to-business and business-to-direct consumers (B2B and B2C), 25.4 percent were business-to-direct consumers (B2C) while 20.1 percent were business-to-business (B2B).

Further, the respondents were asked to indicate the highest level of education attained, their industry experience in terms of years they have worked in their current industry as well as the current position they hold in the business. As shown in Table 2 below, the respondents were senior managers including the chief executive officers, human resource, finance, marketing,

business development, operations, and procurement managers, the majority of whom had industry experience of over 10 years (47.8 percent) while 23.1 percent and 29.1 percent had 5 to 10 years and below 5 years, in that order. In terms of education, the majority of the respondents (53) had attained an undergraduate degree while 25.4 had a Master's degree, and 16.4 percent had a diploma certificate. The highest level of education attained was a Doctor of Philosophy Degree (PhD) (2.2) while high school and trade test certificates were 1.5 percent each. Although the questionnaire had an option of "None" meaning no formal education, no respondent selected the option.

Table 1 Descriptive Characteristics of Surveyed Enterprises

Decription	Frequency	Percent
Industry Type		
Accommodation and food service activities	3	2
Administrative support	1	1
Agriculture, forestry, and fishing	3	2
Construction	3	2
Education	1	1
Electricity, gas, steam, and air conditioning services	7	5
Finance and insurance activities	7	5
Human health and social work activities	10	7
Information and communication	13	10
Manufacturing	23	17
Professional, scientific and technical activities	24	18
Real estate	3	2
Transportation and storage, including tour businesses	12	9
Water supply, sewerage, waste management, and remediation activities	3	2
Wholesale and retail trade, repair of motor vehicles and motorcycles	21	16
Total	134	100.0
Type of Ownership		
Family owned	79	59.0
Non-family owned	55	41.0
Total	134	100.0
Type of Customers		
B2B	27	20.1
B2C	34	25.4
B2B and B2C	73	54.5
Total	134	100.0

Table 2 Descriptive Characteristics of Respondents

Description	Frequency	Percent
Managerial Position		
Business development manager	6	4.5
Chief executive officer	40	29.9
Finance manager	22	16.4
Human resource manager	36	26.9
Marketing Manager	19	14.2
Operations Manager	7	3.0
Procurement manager	4	3.0
Total	134	100.0
Industry Experience		
Below 5 years	39	29.1
5 to 10 years	31	23.1
Over 10 years	64	47.8
Total	134	100.0
Level of Education		
High school	2	1.5
Trade test certificate	2	1.5
Diploma	22	16.4
Undergraduate degree	71	53.0
Master's degree	34	25.4
PhD	3	2.2
Total	134	100.0

3.4 Normality Test

Since most statistical analyses require an assessment of normality assumption to determine whether to apply parametric or non-parametric statistics, Shapiro-Wilk statistical test which has been determined to be the most powerful formal normality test (Razali & Wah, 2011) was performed to determine whether data were normally distributed before proceeding to the data analyses stage. The results indicated that data were normally distributed. This is because the observed Shapiro-Wilk statistic value was 0.986 and the p-value was 0.182. According to Garson (2012) and Razali and Wah, data is considered normally distributed if the Shapiro-Wilk statistic value is close to 1 and the p-value is equal to or above 0.05. Based on the results, it was concluded that it was safe to proceed with parametric statistical analyses.

3.5 Data Analysis

Descriptive statistics were performed using Statistical Package for Social Sciences (SPSS) to derive measures of central tendency and dispersion to determine the quality of data while CFA was used to assess construct validity. Unlike exploratory factor analysis which is used in developing measurement scales, CFA is applied in assessing established measurement scales (Brown, 2015). According to Ahire and Devaraj (2001), construct validation is a process of developing and assessing the validity of a construct which they defined as an unobservable variable that is measured indirectly through a combination of observable variables or indicators. Construct validity indicates the extent to which an unobservable variable sufficiently measures what it was designed to measure (Gallagher et al., 2008; O'Leary-Kelly & Vokurka,1998). Thus,

construct validity assures researchers that what was intended to be measured was indeed what was measured (Flake et al., 2017; Nunnally & Bernstein, 1994), and therefore, subsequent hypothesis testing may as well be relied upon. According to Ahire and Devaraj, validation of a construct entails three stages, that is, instrument development (content and face validity), empirical application and statistical validation (unidimensionality, reliability and construct validity), and post-implementation validation (hypothesis testing). This study aimed to determine the validity of the existing sustainability performance measurement instruments in the context of SMEs in Kenya. Thus, the emphasis of the study was on empirical application and statistical validation. Flake et al. (2017) emphasise the importance of construct validation by stating that "a particular scale may only measure the intended construct within a specific context". Thus, a need to validate the sustainability performance measurement scale in the context of SMEs in Kenya.

To achieve the objective of the study, CFA was done to establish standardised factor loadings, Average Variance Extracted (AVE), square root of AVE as well as composite reliability. While standardised factor loadings and AVE were applied to determine convergent validity, discriminant validity was determined by comparing the square root of AVE estimates for each factor with the squared Interconstruct Correlation Estimates (SIC), where the square root of AVE is greater than SIC is a testament of discriminant validity (Gallaher et al., 2008). Convergent validity and discriminant validity have been applied in the literature to attest to construct validity. Convergent validity relates to the degree to which different approaches to measuring a construct consistently achieve the same output while discriminant validity refers to the degree to which indicators of a construct are unique from indicators of a different construct (Campbell & Fiske, 1959). That is, indicators of a construct can only manifest the construct they were constructed to manifest. Composite reliability which puts into consideration the differing outer loadings of the indicator variables was used to measure internal consistency reliability (Hair et al., 2021).

Further, the internal reliability of the measurement instrument was determined by computing Cronbach's alpha coefficient. Hair et al. (2021) recommends assessment of construct reliability using both composite reliability and Cronbach's alpha. The reliability of a measurement instrument pertains to the constancy of a measurement scale (Carmines& Zeller, 1979). According to Ahire and Devaraj (2001), if the items of a scale represent a significant portion of the variance in a construct compared to the measurement error, then the reliability of the scale is established and the scale is considered reliable. In addition, model fit indices as well as Chi-square statistics were generated to assess the goodness of fit of the measurement model. The goodness of fit of the measurement model indicates how well the indicators exemplify their corresponding latent variables (Gallagher et al., 2008). The aim of CFA was to establish construct validation by determining the measurement model's reliability, validity, and goodness of fit.

4. Results

4.1 Measures of Central Tendency and Dispersion

The study adopted a 5-Point Likert scale type of questionnaire ranging from 1 to 5 representing "not at all" to "very great extent", respectively. As shown in Table 3 below, the highest mean

(4.36) was about the perception of the quality of products and services offered to customers while the lowest mean (3.23) was about expenditure towards community-based programmes an indication that the surveyed SMEs were strong on product and service quality and moderately weak on their contribution to the community. The overall mean was 3.79 with a corresponding standard deviation and coefficient of variation of 0.954 and 26 percent, respectively, suggesting that the surveyed enterprises were moderately achieving sustainability performance. The findings indicated that most of the surveyed SMEs were conscious of sustainability practices and had some form of mechanisms in place to track sustainability performance.

Table 3 Central Tendency and Dispersion

Item Description	N	Mean	Std. Deviation	Coefficient of Variation (Percent
Our firm has always attained energy and water efficiency utilization levels	134	3.49	0.964	28
The use of hazardous materials in our firm has been very low	134	3.96	1.072	27
Noise pollution attributed to our firm has always been at the lowest level possible	134	4.12	0.997	24
Our firm has been known for its efforts in the conservation of natural resources	134	3.76	1.042	28
Air pollution emanating from our firm has always been very negligible	134	3.93	1.215	31
Our firm has significantly contributed to local community employment opportunities	134	3.95	0.844	21
Employment practices in our firm have always been considered "Best Industry Practices"	134	3.92	0.823	21
Health and safety issues in our firm have always been considered satisfactory	134	4.24	0.758	18
Our Participation in community-based programmes over the past 3 years has enhanced our reputation in the community	134	3.42	1.152	34
Our firm's expenditure towards community-based programmes has been on an upward trend	134	3.23	1.156	36
Our firm's production/service has every so often been on schedule	134	3.85	0.751	20
The quality of our firm's products/services has always been appreciated by our valued customers	134	4.36	0.630	14
Our firm's profitability has always been satisfactory	134	3.31	1.036	31
Our firm's investment in emerging technologies has been on an upward trend	134	3.76	0.869	23
Our firm's market share has always been on the increase	134	3.50	1.002	29
Valid N (listwise)	134	3.79	0.954	25

4.2 Confirmatory Factor Analysis

Before CFA was done, principal component analysis with the oblique rotation method (PROMAX) was performed to determine sampling adequacy and dimensions of sustainability performance in the context of SMEs in Kenya. The analysis confirmed sampling adequacy as attested by the Kaiser-Meyer-Olkin measure of sampling adequacy value of 0.81 and a significant Bartlett's test of Sphericity Chi-square. According to Williams et al. (2012), a Kaiser-Meyer-Olkin value of 0.5 and above and a significant Chi-square value is a testament to sampling adequacy. To ascertain the dimensions of sustainability performance, three dimensions were initially requested in accordance with the TBL perspective (Elkington, 1994) which yielded poor goodness of fit indices even after dropping items with poor factor loadings. As a result, unrestricted components were requested. The unrestricted operation yielded four factors accounting for 64.9 percent of the total variance that appeared to represent internal processes, social, economic, and environmental performance perspectives. Internal processes is identified among the components of the balanced scorecard, that is, customer focus, internal processes, innovation and learning, and financial performance perspectives (Kaplan & Norton, 2005). Based on the extracted components, CFA was performed using Analysis of MOment Structures (AMOS) version 26 with the maximum likelihood estimation method to validate the sustainability performance construct. As shown in Table 4 below, all items achieved strong standardised factor loadings above 0.50 except one item under the social component which was at 0.38. Although some studies recommend the dropping of items whose values are below 0.50 (Hair et al., 2010), following Costello and Osborne's (2005) advice that a factor should not have less than three items, the item whose value was 0.38 was retained to ensure a strong and stable factor.

Table 4: Depicting Attainment of Convergent Validity and Reliability

Item code	Item Description	Factor Loading	AVE/CR
Internal Processes Perspective			
ECO_ii	The quality of our firm's products/services has always been appreciated by our valued customers	0.63	
SOC_iii	Health and safety issues in our firm have always been considered satisfactory	0.80	
ECO_i	Our firm's production/service has every so often been on schedule	0.52	AVE = 0.44 CR = 0.82
SOC_i	Our firm has significantly contributed to local community employment opportunities	0.65	SQRT of AVE = 0.66
SOC_ii	Employment practices in our firm have always been considered "Best Industry Practices"	0.74	
ENV_i	Our firm has always attained energy and water efficiency utilization levels	0.58	
Social Perspective			
SOC_v	Our firm's expenditure towards community-based programmes has been on an upward trend	0.93	AVE = 0.64
SOC_iv	Our participation in community-based programmes has enhanced our reputation in the community	0.96	CR = 0.83 SQRT of
ENV_iv	Our firm has been known for its efforts in the conservation of natural resources	0.38	AVE = 0.80
Environmental Perspective			
ENV_iii	Noise pollution attributed to our firm has always been at the lowest level possible	0.82	AVE = 0.59
ENV_v	Air pollution emanating from our firm has always been very negligible	0.80	CR = 0.81 SQRT of
ENV_ii	The use of hazardous materials in our firm has been very low	0.67	AVE = 0.59
Economic Perspective			
ECO_iii	Our firm's profitability has always been satisfactory	0.71	AVE = 0.54
ECO_v	Our firm's market share has always been on the increase	0.87	CR = 0.78 SQRT of
ECO_iv	Our firm's investment in emerging technologies has been on an upward trend	0.60	AVE = 0.73

Table 5 Depicting Construct Square Correlations (CSC)

Constructs			Estimate	Squared Correlations
Effectiveness Performance	<-->	Social performance	0.680	0.462
Effectiveness Performance	<-->	Environmental performance	0.243	0.090
Effectiveness Performance	<-->	Economic performance	0.576	0.332
Social performance	<-->	Environmental performance	0.179	0.032
Social performance	<-->	Economic performance	0.537	0.288
Environmental performance	<-->	Economic performance	0.167	0.0279

Based on the confirmed factor loadings, AVE, the square root (SQRT) of AVE, and composite reliability were computed to establish convergent and discriminant validity. The computation yielded AVE values of 0.44, 0.64, 0.59, and 0.54 and SQRT of AVE of 0.66, 0.80, 0.59, and 0.73 for internal processes, social, environmental, and economic perspectives, respectively (see Table 4 above), implying convergent validity (Bagozzi & Baumgartner, 1994; Hair et al., 2010). As shown in Table 5 above, the maximum squared correlation of the construct was less than the SQRT of AVE (see Table 4 above) of any other construct. suggesting discriminant validity (Anwar et al., 2018; Fornell & Larcker, 1981). Similarly, composite reliability values of 0.82, 0.83, 0.81, and 0.78 for internal processes, social, environmental, and economic perspectives, respectively, were attained as shown in Table 4 above. Further, Cronbach's alpha value of 0.85 was achieved which was within the recommended threshold value of not less than 0.70 (Nunnally, 1978). Hair et al. (2021) recommended that a composite reliability value above 0.60 suggests acceptable reliability of the measurement instruments. Thus, based on both Cronbach's alpha and composite reliability values, the reliability of the measurement scale was attained.

To establish the goodness of fit of the measurement model, the recommended goodness of fit assessment indices such as Tucker Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Standardised Root Mean Square Residual (SRMR), Normed Chi-Square (CMIN/DF) as well Chi-square statistic and the corresponding p-value (Hair et al., 2010; Sun, 2005) were generated. The goodness of fit assessment produced CMIN/DF of 1.460, TLI of 0.943, CFI of 0.954, and SRMR of 0.060 while RMSEA was 0.059. The Chi-square statistic (CMIN) was significant (CMIN = 122.638, P = 0.004). Although the Chi-square value was significant suggesting problems with the measurement model since most indices attained the accepted threshold values, the goodness of fit of the measurement model was considered achieved (Bentler, 1990; Byrne, 2001; Hair et al., 2010; Schreiber et al., 2006).

5. Discussion

This study assessed the validity of sustainability performance measurement construct in SMEs in Kenya using CFA. Based on data received from 134 apex managers of KPMG East Africa and NMG Top 100 companies, the study established reliability, validity as well as the goodness of fit of the measurement model. The study extracted four factors accounting for 64.9 percent of the total variance suggesting that sustainability performance in SMEs in Kenya could best be

explained from a quadruple bottom line perspective which appeared to represent internal processes, economic, social, and ecological performance perspectives. This was an extension of the TBL perspective which focuses on economic, social, and ecological aspects. Thus, the results of this study are in line with Abdul-Rashid et al. (2017) assertion that operational outcomes are vital indicators of sustainability and therefore need to be considered. According to Eltayeb et al. (2011), operational outcomes are exemplified by cost minimisation, enhanced product quality, enhanced on-time delivery, and flexibility. The results are consistent with stakeholder theory, institutional theory, and the theory of planned behaviour as well as empirical studies. According to Muthuri and Gilbert (2011), Kenya has legal and institutional frameworks which compel enterprises to observe certain industry standards to ensure health and safety at the workplace. For example, the Occupational Safety and Health Act of 2005 requires employers to provide training and information on how to carry out work and put in place measures to ensure a safe working environment. The EMCA of 1999, which was enacted by the government of Kenya to address adverse ecological concerns of human activities on the natural environment, conversion and use of energy, land degradation as well as global warming (Mwangi, 2006) also compel SMEs to address issues of waste management.

Prior studies suggest that SME owners' values and beliefs are among the factors that drive SMEs to engage in CSR practices. For example, Visser et al. (2006) attribute CSR practices in Africa to the African culture which is associated with strong communal ties. Muthuri and Gilbert (2011) observed that enterprises in Kenya engage in CSR practices to conform to social norms. According to Kimuli et al. (2021), SMEs in Uganda engage in sustainable entrepreneurship because of financial as well as entrepreneurs' own social and environmental aims. Further, the literature suggests that SMEs are not endowed with resources (Ates & Bititci, 2011; Etes et al., 2013) and hence the need to assess efficiency in resource utilisation, thus, water and energy efficiency. The results of this study are contrary to Malesios et al. (2021) observation that SMEs are more focused on the economic aspect of sustainability neglecting social and ecological goals. This study is limited to the extent that construct indicators were not exhaustive and therefore, there is a need to include more indicators of sustainability performance measurement in future studies to ensure strong and stable factors. Further, the data in this study was limited to the KPMG East Africa and NMG annual Top 100 medium enterprises in Kenya, thus, the results should be interpreted with caution.

6. Conclusion and Recommendations

This study aimed to validate existing sustainability performance measurement scales in the context of Kenya, a developing African country. Based on CFA, four factors representing social, environmental, internal processes, and economic performance perspectives were extracted, suggesting that sustainability performance in SMEs in Kenya could best be viewed from a quadruple bottom line perspective. The study confirmed construct reliability, validity as well as the goodness of fit of the measurement model suggesting that the indicators of sustainability performance used in this study could be applied in assessing sustainability performance in SMEs in Kenya. Based on the results of the analysis, this study concludes that an integration of economic, internal processes, ecological and social aspect as sustainability performance measurement in SMEs in Kenya is valid. Thus, this study recommends that SME managers in

Kenya focus on achieving a balance of social, environmental, internal processes, and economic goals to attain sustainability. The study further recommends empirical studies assessing SMEs' performance in Kenya to integrate social, environmental, internal processes, and economic performance perspectives in their sustainability performance measurement scales.

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